



## *LAND USE COMPATIBILITY STANDARDS*

This appendix contains sample land use compatibility matrices developed by the Military Services. These matrices represent the Services recommendations on compatible land uses to assist local governments in developing land use plans near military installations or operations areas. The compatible land use matrix examples are recommendations from the following:

- Figure D-1  
Air Force AICUZ Instructions
- Figure D-2  
Navy AICUZ Instructions

Also included in this appendix is a sample land use compatibility table developed for the Arizona Regional Military Compatibility Study. This example is provided only as an illustration of a local government implementation of military compatibility standards.

- Figure D-3  
Arizona Regional Military Compatibility Study

Figure D-1. Air Force AICUZ Land Use Compatibility Standards

LAND USE COMPATIBILITY

Table A4.1. Land Use Compatibility With Respect To Noise And Accident Potential.

LAND USE		ACCIDENT POTENTIAL ZONES			NOISE ZONES			
SLUCM NO.	NAME	CLEAR ZONE	APZ I	APZ II	65-69 dB	70-74 dB	75-79 dB	80+ dB
10	Residential							
11	Household units							
11.11	Single units; detached	N	N	Y <sup>1</sup>	A <sup>11</sup>	B <sup>11</sup>	N	N
11.12	Single units; semidetached	N	N	N	A <sup>11</sup>	B <sup>11</sup>	N	N
11.13	Single units; attached row	N	N	N	A <sup>11</sup>	B <sup>11</sup>	N	N
11.21	Two units; side-by-side	N	N	N	A <sup>11</sup>	B <sup>11</sup>	N	N
11.22	Two units; one above the other	N	N	N	A <sup>11</sup>	B <sup>11</sup>	N	N
11.31	Apartments; walk up	N	N	N	A <sup>11</sup>	B <sup>11</sup>	N	N
11.32	Apartments; elevator	N	N	N	A <sup>11</sup>	B <sup>11</sup>	N	N
12	Group quarters	N	N	N	A <sup>11</sup>	B <sup>11</sup>	N	N
13	Residential hotels	N	N	N	A <sup>11</sup>	B <sup>11</sup>	N	N
14	Mobile home parks or courts	N	N	N	N	N	N	N
15	Transient lodgings	N	N	N	A <sup>11</sup>	B <sup>11</sup>	C <sup>11</sup>	N
16	Other residential	N	N	N <sup>1</sup>	A <sup>11</sup>	B <sup>11</sup>	N	N
20	Manufacturing							
21	Food & kindred products; manufacturing	N	N <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
22	Textile mill products; manufacturing	N	N <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
23	Apparel and other finished products made from fabrics, leather, and similar materials; manufacturing	N	N	N <sup>2</sup>	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
24	Lumber and wood products (except furniture); manufacturing	N	Y <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
25	Furniture and fixtures; manufacturing	N	Y <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
26	Paper & allied products; manufacturing	N	Y <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
27	Printing, publishing, and allied industries	N	Y <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
28	Chemicals and allied products; manufacturing	N	N	N <sup>2</sup>	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
29	Petroleum refining and related industries	N	N	N	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
30	Manufacturing							
31	Rubber and misc. plastic products; manufacturing	N	N <sup>2</sup>	N <sup>2</sup>	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
32	Stone, clay and glass products manufacturing	N	N <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
33	Primary metal industries	N	N <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
34	Fabricated metal products; manufacturing	N	N <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>

LAND USE		ACCIDENT POTENTIAL ZONES			NOISE ZONES			
SLUCM NO.	NAME	CLEAR ZONE	APZ I	APZ II	65-69 dB	70-74 dB	75-79 dB	80+ dB
35	Professional, scientific, and controlling instruments; photographic and optical goods; watches and clocks manufacturing	N	N	N <sup>2</sup>	Y	A	B	N
39	Miscellaneous manufacturing	N	Y <sup>2</sup>	Y <sup>2</sup>	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
40	Transportation, communications and utilities							
41	Railroad, rapid rail transit and street railroad transportation	N <sup>3</sup>	Y <sup>4</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
42	Motor vehicle transportation	N <sup>3</sup>	Y	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
43	Aircraft transportation	N <sup>3</sup>	Y <sup>4</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
44	Marine craft transportation	N <sup>3</sup>	Y <sup>4</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
45	Highway & street right-of-way	N <sup>3</sup>	Y	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
46	Automobile parking	N <sup>3</sup>	Y <sup>4</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
47	Communications	N <sup>3</sup>	Y <sup>4</sup>	Y	Y	A <sup>15</sup>	B <sup>15</sup>	N
48	Utilities	N <sup>3</sup>	Y <sup>4</sup>	Y	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>
49	Other transportation communications and utilities	N <sup>3</sup>	Y <sup>4</sup>	Y	Y	A <sup>15</sup>	B <sup>15</sup>	N
50	Trade							
51	Wholesale trade	N	Y <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
52	Retail trade-building materials, hardware and farm equipment	N	Y <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
53	Retail trade-general merchandise	N	N <sup>2</sup>	Y <sup>2</sup>	Y	A	B	N
54	Retail trade-food	N	N <sup>2</sup>	Y <sup>2</sup>	Y	A	B	N
55	Retail trade-automotive, marine craft, aircraft and accessories	N	Y <sup>2</sup>	Y <sup>2</sup>	Y	A	B	N
56	Retail trade-apparel and accessories	N	N <sup>2</sup>	Y <sup>2</sup>	Y	A	B	N
57	Retail trade-furniture, home furnishings and equipment	N	N <sup>2</sup>	Y <sup>2</sup>	Y	A	B	N
58	Retail trade-eating and drinking establishments	N	N	N <sup>2</sup>	Y	A	B	N
59	Other retail trade	N	N <sup>2</sup>	Y <sup>2</sup>	Y	A	B	N
60	Services							
61	Finance, insurance and real estate services	N	N	Y <sup>6</sup>	Y	A	B	N
62	Personal services	N	N	Y <sup>6</sup>	Y	A	B	N
62.4	Cemeteries	N	Y <sup>7</sup>	Y <sup>7</sup>	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14,2</sup>
63	Business services	N	Y <sup>8</sup>	Y <sup>8</sup>	Y	A	B	N
64	Repair services	N	Y <sup>2</sup>	Y	Y	Y <sup>12</sup>	Y <sup>13</sup>	Y <sup>14</sup>
65	Professional services	N	N	Y <sup>6</sup>	Y	A	B	N

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LAND USE		ACCIDENT POTENTIAL ZONES			NOISE ZONES			
SLUCM NO.	NAME	CLEAR ZONE	APZ I	APZ II	65-69 dB	70-74 dB	75-79 dB	80+ dB
65.1	Hospitals, nursing homes	N	N	N	A*	B*	N	N
65.1	Other medical facilities	N	N	N	Y	A	B	N
66	Contract construction services	N	Y <sup>6</sup>	Y	Y	A	B	N
67	Governmental services	N	N	Y <sup>6</sup>	Y*	A*	B*	N
68	Educational services	N	N	N	A*	B*	N	N
69	Miscellaneous services	N	N <sup>2</sup>	Y <sup>2</sup>	Y	A	B	N
70	Cultural, entertainment and recreational							
71	Cultural activities (including churches)	N	N	N <sup>2</sup>	A*	B*	N	N
71.2	Nature exhibits	N	Y <sup>2</sup>	Y	Y*	N	N	N
72	Public assembly	N	N	N	Y	N	N	N
72.1	Auditoriums, concert halls	N	N	N	A	B	N	N
72.11	Outdoor music shell, amphitheaters	N	N	N	N	N	N	N
72.2	Outdoor sports arenas, spectator sports	N	N	N	Y <sup>17</sup>	Y <sup>17</sup>	N	N
73	Amusements	N	N	Y <sup>8</sup>	Y	Y	N	N
74	Recreational activities (including golf courses, riding stables, water recreation)	N	Y <sup>8,9,10</sup>	Y	Y*	A*	B*	N
75	Resorts and group camps	N	N	N	Y*	Y*	N	N
76	Parks	N	Y <sup>8</sup>	Y <sup>8</sup>	Y*	Y*	N	N
79	Other cultural, entertainment and recreation	N	Y <sup>9</sup>	Y <sup>9</sup>	Y*	Y*	N	N
80	Resources production and extraction							
81	Agriculture (except livestock)	Y <sup>16</sup>	Y	Y	Y <sup>18</sup>	Y <sup>19</sup>	Y <sup>20</sup>	Y <sup>20,21</sup>
81.5 to 81.7	Livestock farming and animal breeding	N	Y	Y	Y <sup>18</sup>	Y <sup>19</sup>	Y <sup>20</sup>	Y <sup>20,21</sup>
82	Agricultural related activities	N	Y <sup>5</sup>	Y	Y <sup>18</sup>	Y <sup>19</sup>	N	N
83	Forestry activities and related services	N <sup>5</sup>	Y	Y	Y <sup>18</sup>	Y <sup>19</sup>	Y <sup>20</sup>	Y <sup>20,21</sup>
84	Fishing activities and related services	N <sup>5</sup>	Y <sup>5</sup>	Y	Y	Y	Y	Y
85	Mining activities and related services	N	Y <sup>5</sup>	Y	Y	Y	Y	Y
89	Other resources production and extraction	N	Y <sup>5</sup>	Y	Y	Y	Y	Y

**LEGEND**

SLUCM - Standard Land Use Coding Manual, U.S. Department of Transportation.

Y - (Yes) - Land use and related structures are compatible without restriction.

N - (No) - Land use and related structures are not compatible and should be prohibited.

Yx - (yes with restrictions) - Land use and related structures generally compatible; see notes indicated by the superscript.

Nx - (no with exceptions) - See notes indicated by the superscript.

NLR - (Noise Level Reduction) - NLR (outdoor to indoor) to be achieved through incorporation of noise attenuation measures into the design and construction of the structures.

A, B, or C - Land use and related structures generally compatible; measures to achieve NLR for A(DNL/CNEL 65-69), B(DNL/CNEL 70-74), C(DNL/CNEL 75-79), need to be incorporated into the design and construction of structures.

A\*, B\*, and C\* - Land use generally compatible with NLR. However, measures to achieve an overall noise level reduction do not necessarily solve noise difficulties and additional evaluation is warranted. See appropriate footnotes.

\* - The designation of these uses as "compatible" in this zone reflects individual federal agencies' and program considerations of general cost and feasibility factors, as well as past community experiences and program objectives. Localities, when evaluating the application of these guidelines to specific situations, may have different concerns or goals to consider.

**NOTES:**

1. Suggested maximum density of 1-2 dwelling units per acre, possibly increased under a Planned Unit Development (PUD) where maximum lot coverage is less than 20 percent.
2. Within each land use category, uses exist where further deliberating by local authorities may be needed due to the variation of densities in people and structures. Shopping malls and shopping centers are considered incompatible use in any accident potential zone (CZ, APZ I, or APZ II).
3. The placing of structures, buildings, or above-ground utility lines in the clear zone is subject to severe restrictions. In a majority of the clear zones, these items are prohibited. See AFI 32-7060 (formerly AFR 19-9) and AFJM 32-8008 (formerly AFM 86-14) for specific guidance.
4. No passenger terminals and no major above-ground transmission lines in APZ I.
5. Factors to be considered: labor intensity, structural coverage, explosive characteristics, and air pollution.
6. Low-intensity office uses only. Meeting places, auditoriums, etc., are not recommended.
7. Excludes chapels.
8. Facilities must be low intensity.
9. Clubhouse not recommended.
10. Areas for gatherings of people are not recommended.
- 11a. Although local conditions may require residential use, it is discouraged in DNL/CNEL 65-69 dB and strongly discouraged in DNL/CNEL 70-74 dB. The absence of viable alternative development options

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should be determined and an evaluation indicating a demonstrated community need for residential use would not be met if development were prohibited in these zones should be conducted prior to approvals.

11b. Where the community determines the residential uses must be allowed, measures to achieve outdoor to indoor Noise Level Reduction (NLR) for DNL/CNEL 65-69 dB and DNL/CNEL 70-74 dB should be incorporated into building codes and considered in individual approvals

11c. NLR criteria will not eliminate outdoor noise problems. However, building location and site planning, and design and use of berms and barriers can help mitigate outdoor exposure, particularly from near ground level sources. Measures that reduce outdoor noise should be used whenever practical in preference to measures which only protect interior spaces.

12. Measures to achieve the same NLR as required for facilities in DNL/CNEL 65-69 dB range must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

13. Measures to achieve the same NLR as required for facilities in DNL/CNEL 70-74 dB range must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

14. Measures to achieve the same NLR as required for facilities in DNL/CNEL 75-79 dB range must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas or where the normal noise level is low.

15. If noise sensitive, use indicated NLR; if not, the use is compatible.

16. No buildings.

17. Land use is compatible provided special sound reinforcement systems are installed.

18. Residential buildings require the same NLR as required for facilities in DNL/CNEL 65-69 dB range.

19. Residential buildings require the same NLR as required for facilities in DNL/CNEL 70-74 dB range.

20. Residential buildings are not permitted.

21. Land use is not recommended. If the community decides the use is necessary, hearing protection devices should be worn by personnel.

Figure D-2. Navy AICUZ Land Use Compatibility Standards

Land Use		Suggested Land Use Compatibility						
		Noise Zone 1 (DNL or CNEI)		Noise Zone 2 (DNL or CNEI)		Noise Zone 3 (DNL or CNEI)		
SLUCM NO	LAND USE NAME	< 55	55- 64	65 - 69	70 -74	75- 79	80 -84	85+
	<b>Residential</b>							
11	Household units	Y	Y <sup>1</sup>	N <sup>1</sup>	N <sup>1</sup>	N	N	N
11.11	Single units: detached	Y	Y <sup>1</sup>	N <sup>1</sup>	N <sup>1</sup>	N	N	N
11.12	Single units: semidetached	Y	Y <sup>1</sup>	N <sup>1</sup>	N <sup>1</sup>	N	N	N
11.13	Single units: attached row	Y	Y <sup>1</sup>	N <sup>1</sup>	N <sup>1</sup>	N	N	N
11.21	Two units: side-by-side	Y	Y <sup>1</sup>	N <sup>1</sup>	N <sup>1</sup>	N	N	N
11.22	Two units: one above the other	Y	Y <sup>1</sup>	N <sup>1</sup>	N <sup>1</sup>	N	N	N
11.31	Apartments: walk-up	Y	Y <sup>1</sup>	N <sup>1</sup>	N <sup>1</sup>	N	N	N
11.32	Apartments: elevator	Y	Y <sup>1</sup>	N <sup>1</sup>	N <sup>1</sup>	N	N	N
12	Group quarters	Y	Y <sup>1</sup>	N <sup>1</sup>	N <sup>1</sup>	N	N	N
13	Residential hotels	Y	Y <sup>1</sup>	N <sup>1</sup>	N <sup>1</sup>	N	N	N
14	Mobile home parks or courts	Y	Y <sup>1</sup>	N	N	N	N	N
15	Transient lodgings	Y	Y <sup>1</sup>	N <sup>1</sup>	N <sup>1</sup>	N <sup>1</sup>	N	N
16	Other residential	Y	Y <sup>1</sup>	N <sup>1</sup>	N <sup>1</sup>	N	N	N
20	<b>Manufacturing</b>							
21	Food and kindred products; manufacturing	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
22	Textile mill products; manufacturing	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
23	Apparel and other finished products; products made from fabrics, leather and similar materials; manufacturing	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
24	Lumber and wood products (except furniture); manufacturing	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
25	Furniture and fixtures; manufacturing	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
26	Paper and allied products; manufacturing	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
27	Printing, publishing, and allied industries	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
28	Chemicals and allied products; manufacturing	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
29	Petroleum refining and related industries	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N

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Land Use		Suggested Land Use Compatibility						
		Noise Zone 1 (DNL or CNEL)		Noise Zone 2 (DNL or CNEL)		Noise Zone 3 (DNL or CNEL)		
SLUCM NO	LAND USE NAME	< 55	55- 64	65 - 69	70 -74	75- 79	80 -84	85+
30	<i>Manufacturing (continued)</i>							
31	Rubber and misc. plastic products; manufacturing	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
32	Stone, clay, and glass products; manufacturing	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
33	Primary metal products; manufacturing	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
34	Fabricated metal products; manufacturing	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
35	Professional, scientific, and controlling instruments; photographic and optical goods; watches and clocks	Y	Y	Y	25	30	N	N
39	Miscellaneous manufacturing	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
40	<i>Transportation, communication and utilities.</i>							
41	Railroad, rapid rail transit, and street railway transportation	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
42	Motor vehicle transportation	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
43	Aircraft transportation	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
44	Marine craft transportation	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
45	Highway and street right-of-way	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
46	Automobile parking	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
47	Communication	Y	Y	Y	25 <sup>5</sup>	30 <sup>5</sup>	N	N
48	Utilities	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
49	Other transportation, communication, and utilities	Y	Y	Y	25 <sup>5</sup>	30 <sup>5</sup>	N	N
50	<i>Trade</i>							
51	Wholesale trade	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
52	Retail trade – building materials, hardware, and farm equipment	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
53	Retail trade – shopping centers	Y	Y	Y	25	30	N	N
54	Retail trade - food	Y	Y	Y	25	30	N	N

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Land Use		Suggested Land Use Compatibility						
		Noise Zone 1 ( DNL or CNEL)		Noise Zone 2 ( DNL or CNEL)		Noise Zone 3 ( DNL or CNEL)		
SLUCM NO	LAND USE NAME	< 55	55- 64	65 - 69	70 - 74	75- 79	80 -84	85+
50	Trade (Continued)							
55	Retail trade – automotive, marine craft, aircraft, and accessories	Y	Y	Y	25	30	N	N
56	Retail trade – apparel and accessories	Y	Y	Y	25	30	N	N
57	Retail trade – furniture, home furnishings, and equipment	Y	Y	Y	25	30	N	N
58	Retail trade – eating and drinking establishments	Y	Y	Y	25	30	N	N
59	Other retail trade	Y	Y	Y	25	30	N	N
60	Services							
61	Finance, insurance, and real estate services	Y	Y	Y	25	30	N	N
62	Personal services	Y	Y	Y	25	30	N	N
62.4	Cemeteries	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4,11</sup>	Y <sup>4,11</sup>
63	Business services	Y	Y	Y	25	30	N	N
63.7	Warehousing and storage	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
64	Repair services	Y	Y	Y	Y <sup>2</sup>	Y <sup>3</sup>	Y <sup>4</sup>	N
65	Professional services	Y	Y	Y	25	30	N	N
65.1	Hospitals, other medical facilities	Y	Y <sup>1</sup>	25	30	N	N	N
65.16	Nursing homes	Y	Y	N <sup>1</sup>	N <sup>1</sup>	N	N	N
66	Contract construction services	Y	Y	Y	25	30	N	N
67	Government services	Y	Y <sup>1</sup>	Y <sup>1</sup>	25	30	N	N
68	Educational services	Y	Y <sup>1</sup>	25	30	N	N	N
69	Miscellaneous	Y	Y	Y	25	30	N	N
70	Cultural, entertainment and recreational							
71	Cultural activities (and churches)	Y	Y <sup>1</sup>	25	30	N	N	N
71.2	Nature exhibits	Y	Y <sup>1</sup>	Y <sup>1</sup>	N	N	N	N
72	Public assembly	Y	Y <sup>1</sup>	Y	N	N	N	N
72.1	Auditoriums, concert halls	Y	Y	25	30	N	N	N
72.11	Outdoor music shells, amphitheaters	Y	Y <sup>1</sup>	N	N	N	N	N
72.2	Outdoor sports arenas, spectator sports	Y	Y	Y <sup>2</sup>	Y <sup>2</sup>	N	N	N
73	Amusements	Y	Y	Y	Y	N	N	N
74	Recreational activities (include golf courses, riding stables, water recreation)	Y	Y <sup>1</sup>	Y <sup>1</sup>	25	30	N	N
75	Resorts and group camps	Y	Y <sup>1</sup>	Y <sup>1</sup>	Y <sup>1</sup>	N	N	N
76	Parks	Y	Y <sup>1</sup>	Y <sup>1</sup>	Y <sup>1</sup>	N	N	N
79	Other cultural, entertainment, and recreation	Y	Y <sup>1</sup>	Y <sup>1</sup>	Y <sup>1</sup>	N	N	N

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Land Use		Suggested Land Use Compatibility						
		Noise Zone 1 ( DNL or CNEL)		Noise Zone 2 ( DNL or CNEL)		Noise Zone 3 ( DNL or CNEL)		
SLUCM NO	LAND USE NAME	< 55	55- 64	65 - 69	70 -74	75- 79	80 -84	85
80	Resource Production and Extraction							
81	Agriculture (except livestock)	Y	Y	Y <sup>8</sup>	Y <sup>9</sup>	Y <sup>10</sup>	Y <sup>10,11</sup>	Y
81.5	Livestock farming	Y	Y	Y <sup>8</sup>	Y <sup>9</sup>	N	N	
81.7	Animal breeding	Y	Y	Y <sup>8</sup>	Y <sup>9</sup>	N	N	
82	Agriculture-related activities	Y	Y	Y <sup>8</sup>	Y <sup>9</sup>	Y <sup>10</sup>	Y <sup>10,11</sup>	Y
83	Forestry activities	Y	Y	Y <sup>8</sup>	Y <sup>9</sup>	Y <sup>10</sup>	Y <sup>10,11</sup>	Y
84	Fishing activities	Y	Y	Y	Y	Y	Y	
85	Mining activities	Y	Y	Y	Y	Y	Y	
89	Other resource production or extraction	Y	Y	Y	Y	Y	Y	

Key:

SLUCM Standard Land Use Coding Manual, U.S. Department of Transportation

Y (Yes) Land use and related structures compatible without restrictions.

N (No) Land use and related structures are not compatible and should be prohibited.

Y\* (Yes with Restrictions) Land use and related structures are generally compatible. However, see note(s) indicated by the superscript.

N\* (No with Exceptions) Land use and related structures are generally incompatible. However, see notes indicated by the superscript.

NLR (Noise Level Reduction) Noise level reduction (outdoor to indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.

25, 30, or 35 The numbers refer to NLR levels. Land use and related structures are generally compatible; however, measures to achieve NLR of 25, 30, or 35 must be incorporated into design and construction of structures. However, measures to achieve an overall noise reduction do not necessarily solve noise difficulties outside the structure, and additional evaluation is warranted. Also, see notes indicated by superscripts.

DNL Day night average sound level.

CNEL Community noise equivalent level (normally within a very small decibel difference of DNL).

Ldn Mathematical symbol for DNL.

Notes:

1.

a) Although local conditions regarding the need for housing may require residential use in these zones, residential use is discouraged in 65-69 dB NL and strongly discouraged in 70-74 dB DNL. The absence of viable alternative development options should be determined and an evaluation should be conducted locally prior to local approvals, indicating that a demonstrated community need for the residential use would not be met if development were prohibited in these zones.

b) Where the community determines that these uses must be allowed, measures to achieve and outdoor to indoor NLR of at least 25 dB in DNL 65-69 and NLR of 30 dB in DNL 70-74 should be incorporated into building codes and be in individual approvals; for transient housing a NLR of at least 35 dB should be incorporated in DNL 75-79.

c) Normal permanent construction can be expected to provide a NLR of 20 dB; thus the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation, upgraded Sound Transmission Class (STC) ratings in windows and doors, and closed windows year round. Additional consideration should be given to modifying NLR levels based on peak noise levels or vibrations.

d) NLR criteria will not eliminate outdoor noise problems. However, building location and site planning, design and use of berms and barriers can help mitigate outdoor noise exposure NLR, particularly from ground-level sources. Measures that reduce noise at a site should be used wherever practical in preference to measures that protect only interior spaces.

Figure D-3. Arizona Regional Military Compatibility Study

Selected Land Uses	Clear Zone	APZ I	APZ II	65-69	70-74	75-80	80+
S-F Residential	N	N	Y	Y	Y	N	N
Schools	N	N	N	Y	Y	N	N
Churches	N	N	N	Y	Y	N	N
Hospitals	N	N	N	Y	Y	N	N
Public Assembly	N	N	N	Y	N	N	N
Outdoor Amphitheaters	N	N	N	N	N	N	N
Retail-Food	N	N	Y	Y	Y	Y	N

Source: Prepared by Parsons from USAF data.

Although ARS §28-8481 does not permit single-family residential uses in any of the hazard or noise zones (Table 3-2), it is silent about uses in the Clear Zone, since the law does not define such a zone.

Table 3-2: Compatibility of Uses – ARS §28-8481

Selected Land Uses	APZ I	APZ II	65-69	70-74	75-79	80-84	85+
S-F Residential	N	N <sup>12</sup>	N <sup>12</sup>	N <sup>12</sup>	N	N	N
Schools <sup>13</sup>	N	N	N	N	N	N	N
Churches	N	N	Y	Y	N	N	N
Hospitals	N	N	Y	Y	N	N	N
Public Assembly <sup>14</sup>	N	N	N	N	N	N	N
Outdoor Amphitheaters	N	N	Y <sup>15</sup>	Y <sup>15</sup>	Y <sup>15</sup>	N	
Retail-Food	N	N <sup>12</sup>	Y	Y	Y	N	

Source: Prepared by Parsons from ARS §28-8481 data.

Various uses that concentrate and congregate population are permitted by ARS §28-8481 in the accident potential and high noise zones. All categories of personal and business services that are listed in the statute, including indoor recreation, and several types of commercial-retail trade, wholesale trade, retail sale of building materials and government services are permitted within APZ II and noise zones 65 dnl through 79 dnl. The above-mentioned uses are incompatible with military aircraft carrying live ordinance and high noise zones. Outdoor amphitheaters and music shells, retail sale of general merchandise, retail apparel, water-based recreation, eating and drinking, and retail-food uses are permitted within noise zones 65 dnl through 79 dnl. Churches, medical and health services, auditoriums and concert halls, and other public and quasi-public services are permitted within noise zones 65 dnl through 74dnl.

<sup>12</sup> The use is allowed in the AICUZ Guidance but is not permitted under Arizona law.

<sup>13</sup> Schools as a specific land use category are not addressed in ARS §28-8481; the data provided above are for the category: Other Public and Quasi-Public Services.

<sup>14</sup> Public Assembly as a specific land use category is not addressed and it is not defined in ARS §28-8481; the data provided above are for the category: Other Public and Quasi-Public Services.

<sup>15</sup> The use is allowed under Arizona law, but not under the AICUZ Program.

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## *Appendix D*

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*Please see the next page.*